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INTELLECTUAL PROPERTY LAW ATTORNEYS

1616 South Voss Road, Suite 750

Houston, Texas 77057-2631

Bus: (713) 468-8880

Fax: (713) 468-8883

# Fax

<b>To:</b>	Examiner Isaac M. Woo	<b>From:</b>	Dan C. Hu
<b>Co.:</b>	U.S. Patent Office	<b>Date:</b>	May 29, 2007
<b>Fax:</b>	(571) 273-8300	<b>Pages:</b>	7 (including cover sheet)
<b>Serial No.:</b>	09/977,038	<b>Our Ref:</b>	10150 (NCR.0063US)

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Attorney Docket No.: 10150 (NCR.0063US)

DCH/gky

Date: May 29, 2007

Applicant(s): DOUGLAS P. BROWN ET AL.

Serial No.: 09/977,038

Filing Date: October 12, 2001

Title: INDEX SELECTION IN A DATABASE SYSTEM

1. Reply Brief in Response to Examiner's Answer Dated March 28, 2007.

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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Douglas P. Brown et al.	§	Art Unit:	2166
		§		
Serial No.:	09/977,038	§		
		§	Examiner:	Isaac M. Woo
Filed:	October 12, 2001	§		
		§		
For:	Index Selection in a Database System	§	Atty. Dkt. No.:	10150 (NCR.0063US)
		§		

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**REPLY BRIEF IN RESPONSE TO**  
**EXAMINER'S ANSWER DATED MARCH 28, 2007**

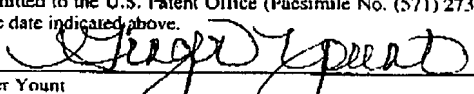
Sir:

The following sets forth Appellant's Reply to the Examiner's Answer dated March 28, 2007.

**A. REPLY TO EXAMINER'S ANSWER WITH RESPECT TO SECTION VII.A.1 OF THE APPEAL BRIEF**

As pointed out in the Appeal Brief, Agrawal does not disclose a test system that has an emulation module to receive environment information of a database system *separate from the test system*, where the emulation module is to emulate an environment of the database system based on the environment information. As clearly recited in claim 1, this emulation module is part of the test system that is *separate* from the database system.

The Appeal Brief noted that a clear error made by the Examiner in the final rejection of claim 1 is that the Examiner never made reference to the words "separate from the test system"

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recited in claim 1 (line 4) in either the final Office Action dated December 1, 2006, or the Advisory Action dated February 21, 2006. In the final rejection of claim 1, the Examiner simply left out the words "separate from the test system" when paraphrasing claim 1. In fact, in the final rejection, the Examiner failed to provide any explanation of which elements of Agrawal are considered the database system and which elements of Agrawal are considered the *separate* test system.

For the first time, in the Examiner's Answer (pp. 11-12) the Examiner set forth an explanation of what is considered the "database system" and "test system" in Agrawal. The Examiner first noted that the phrase "database system separate from the test system" was indefinite. However, an objection that a term is indefinite does not allow the claim term to be ignored completely. In Appellant's Reply to Office Action submitted on January 31, 2006, Appellant explained why the above phrase is not indefinite. A person of ordinary skill in the art clearly would have understood what was meant by "a database system separate from a test system." See 1/31/2006 Reply to Office Action, at 10.

In the Examiner's Answer, the Examiner asserted that "database system" and "test system" as recited in the claims are considered to be separate program functions. Examiner's Answer at 12. Based on this reading, the Examiner stated that element 210 in Fig. 2 of Agrawal constitutes the test system. *Id.* The Examiner stated that this "test" system (210) receives environment information from a database system. *Id.* However, even here, the Examiner has failed to identify what in Agrawal constitutes the database system.

Assuming for the sake of argument that "210" in Fig. 2 of Agrawal can be considered a "test" system, none of the components that are indicated generally as 210 in Agrawal performs the following task that is expressly recited in claim 1: emulate an environment of the database

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system based on the received environment information of the database system. There is absolutely no indication anywhere within Agrawal that any emulation is being performed by any of the components in 210 in Fig. 2 of Agrawal.

In fact, there is an inconsistency in the Examiner's rejection as stated in the Examiner's Answer. Page 4 of the Examiner's Answer states that the emulation module is element 240 depicted in Fig. 2 of Agrawal. However, element 240 in Fig. 2 of Agrawal is not part of the set of components 210 in Fig. 2 of Agrawal, which was equated as being the test system of Agrawal. Therefore, the final rejection as set forth in the Examiner's Answer is clearly defective in that the Examiner has cited to an element (240) as being the emulation module, even though the Examiner has cited to a different set of components (210) as being the test system, when in fact claim 1 explicitly recites that the emulation module is contained in the test system.

Moreover, even more fundamentally, it is noted that the element 240 (equated with the emulation module of claim 1 by the Examiner) is part of the database server 245 depicted in Fig. 2 of Agrawal. Thus, it is clear that the component in Agrawal (240) that has been equated by the Examiner with the emulation module of claim 1, is actually part of the database system (database server 245), not *separate* from the database system. Thus, even under the statement that "database system separate from the test system" means separate functionally, Agrawal still does not satisfy this type of separateness, since the module 240 (identified as being the emulation module) is part of the database system (database server 245), not part of a separate test system (equated to 210 by the Examiner).

In view of the foregoing arguments and the arguments presented in the Appeal Brief, reversal of all final rejections is respectfully requested.

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**B. REPLY TO EXAMINER'S ANSWER WITH RESPECT TO SECTION VII.A.2 OF THE APPEAL BRIEF**

In response to Appellant pointing out the defective final rejection with respect to dependent claim 5, the Examiner cited to column 1, lines 57-65, of Agrawal as disclosing the subject matter of claim 5. Claim 5 recites that statistics are based on a scan of a sample of one or more tables, where the sample is less than all the rows of the one or more tables. Claim 5 depends from claim 4, which recites that an optimizer is adapted to use the statistics that are based on a scan of a sample of one or more tables. The cited passage in column 1, at lines 57-65, of Agrawal refers to building an index that is the subset of a table to enable a search to be more efficient. Building indexes, as taught in the column 1 passage of Agrawal, has nothing to with an optimizer using statistics that is based on a scan of a sample of one or more tables.

In view of the foregoing and the arguments presented in the Appeal Brief, reversal of the final rejection of claim 5 is respectfully requested.

**C. REPLY TO EXAMINER'S ANSWER WITH RESPECT TO SECTION VII.A.3. OF THE APPEAL BRIEF**

In response to Appellant's arguments indicating the defective final rejection of dependent claim 6, the Examiner further cited column 4, lines 6-10, of Agrawal. Claim 6 recites that the test system further comprises a graphical user interface to receive an indication of a user-specified size of the sample, which is the sample that is scanned to produce statistics (recited in claim 5). The passage in column 4, at lines 6-10, of Agrawal refers to enumerating a set of candidate indexes and candidate materialized views using a greedy algorithm. There is absolutely no mention whatsoever of a graphical user interface to receive an indication of a user-specified size of a sample, as recited in claim 6.

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For the foregoing reasons and for reasons stated in the Appeal Brief, reversal of the final rejection of claim 6 is respectfully requested.

**D. REPLY TO EXAMINER'S ANSWER REGARDING SECTION VII.A.4. OF THE APPEAL BRIEF**

In response to Appellant's arguments that Agrawal further fails to disclose the subject matter of dependent claims 9-16, the Examiner further cited the following two passages of Agrawal: column 7, lines 47-63; and column 14, lines 40-53. Claim 9 recites a second module that has an analysis module and an optimizer, where the analysis module is adapted to apply a genetic algorithm, and to cooperate with the optimizer to generate the recommended index using the genetic algorithm. The passage at column 7, lines 47-63, of Agrawal cited in the Examiner's Answer on page 13 makes absolutely no mention whatsoever of using a genetic algorithm. That is also true of the cited passage in column 14, at lines 40-53, of Agrawal, which also makes absolutely no mention of using a genetic algorithm. In fact, as noted in the Appeal Brief, Agrawal does not use the term "genetic algorithm" anywhere.

In view of the foregoing, and the arguments presented in the Appeal Brief, reversal of the final rejection of claims 9-16 is respectfully requested.

**E. CONCLUSION**

The Examiner did not provide any answer with respect to Appellant's arguments presented in the Appeal Brief in Sections VII.A.5.-10. Therefore, reversal of the final rejection of the claims discussed in those subsections is respectfully requested.

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In view of the foregoing, this application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

Date: \_\_\_\_\_

*May 29, 2007*



Dan C. Hu  
Registration No. 40,025  
TROP, PRUNER & HU, P.C.  
1616 South Voss Road, Suite 750  
Houston, TX 77057-2631  
Telephone: (713) 468-8880  
Facsimile: (713) 468-8883